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Abstract
Based on data from the 2003 and 2009/2010 Canadian Community Health Survey (CCHS), this article provides current information about the sexual behaviours and condom use of 15- to 24-year-olds and examines changes since 2003. Between 2003 and 2009/2010, the percentage of 15- to 24-year-olds who had had sexual intercourse at least once remained stable, as did the percentages who reported becoming sexually active at an early age and having multiple sexual partners. Condom use increased between 2003 and 2009/2010, particularly among people reporting that they had just one sexual partner.

Key words
Adolescent behaviour, contraceptive behaviour, sexual intercourse, sexual partners

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Sexual behaviour is a major determinant of sexual and reproductive health.[1,2] Early sexual intercourse, unprotected sex, and having multiple sexual partners put youth at risk of HIV and other sexually transmitted infections (STIs)[3-6] and of unplanned pregnancy.[7,8] Individuals aged 15 to 24 experience some of the highest rates of STIs.[9-11]

Based on results of the 2003 and 2009/2010 Canadian Community Health Survey (CCHS), this article examines whether the sexual behaviour and condom use of 15- to 24-year-olds has changed since 2003 (the earliest years for which comparable national data are available).

Sexual activity

In 2009/2010, 66% of 15- to 24-year-olds reported having had sexual intercourse at least once, which was not significantly different from 2003 (data not shown). The likelihood of being sexually active rose with age. At ages 15 to 17, 30% reported having had sex, compared with 68% of 18- to 19-year-olds and 86% of 20- to 24-year-olds. The 2003 figures were 30%, 68%, and 85%, respectively (data not shown).

Early sexual intercourse

In 2009/2010, 9% of 15- to 24-year-olds reported that they first had sexual intercourse when they were younger than 15, and about 25% had had intercourse for the first time at age 15 or 16 (Table 1). These results were not significantly different from 2003. However, in 2003, similar percentages of males and females reported having had intercourse before age 15, but in 2009/2010, this was less common among females (8%) than males (10%).

Multiple partners

In 2009/2010, about one-third of sexually active 15- to 24-year-olds reported having had sexual intercourse with more than one partner in the previous 12 months, unchanged from 2003 (Table 2). A larger percentage of sexually active males than females had had intercourse with more than one partner: 39% compared with 25%. The percentage reporting more than one sexual partner was higher among 15- to 17-year-olds than among 20- to 24-year-olds (35% versus 30%).

Table 1
Number and percentage of 15- to 24-year-olds who had first sexual intercourse before age 17, by sex, household population, Canada, 2003 and 2009/2010

	2003				2009/2010			
			95% confidence interval				95% confidence interval	
Age at first intercourse	Number '000	%	from	to	Number '000	%	from	to
Total								
Younger than 15	375.8	9.6	8.9	10.3	376.8	9.0	8.3	9.7
15 or 16	972.9	24.8	23.7	25.9	1,072.2	25.7	24.6	26.8
Sex								
Males								
Younger than 15	195.0	9.8	8.8	10.9	210.0	9.7	8.7	10.8
15 or 16	491.3	24.8	23.2	26.3	570.4	26.5	24.8	28.1
Females								
Younger than 15	180.8	9.3	8.4	10.3	166.8	8.2*	7.4	9.1
15 or 16	481.6	24.8	23.4	26.2	501.8	24.8	23.3	26.3

* significantly different from males younger than 15 ($p<0.05$)
Note: Based on sexually active and inactive 15- to 24-year-olds.
Sources: 2003 and 2009/2010 Canadian Community Health Survey

The percentages reporting multiple sexual partners were fairly consistent across the country. The exception was Yukon, where 54% of 15- to 24-year-olds reported having had intercourse with more than one partner in the past year, compared with the Canadian average of 32%. In Alberta, the percentage reporting multiple partners had been below the national figure in 2003, but by 2009/2010, the percentages were not significantly different.

Condom use

In 2009/10, 68% of sexually active 15- to 24-year olds reported using condoms the last time they had intercourse, compared with 62% in 2003 (Table 2). As in 2003, condom use was more common among

The data

Data from the 2003 and 2009/2010 Canadian Community Health Survey (CCHS) were used to estimate the prevalence of sexual activity, the number of sexual partners, and condom use among 15- to 24-year-olds. Data for the 2003 CCHS were collected from January through December. In 2007, the survey changed to continuous collection; the data for 2009/2010 were collected from January 2009 through December 2010. The response rate for 2003 was 81%, and for 2009/2010, 72%. Most interviews—70% in 2003 and 62% in 2009/2010—were by telephone. The samples used for the analyses in this article numbered 18,084 and 15,966 respondents aged 15 to 24, weighted to represent populations of approximately 4.2 million in 2003 and 4.4 million in 2009/2010. Details about the survey design and sampling techniques have been published elsewhere.[12]

All differences were tested to ensure statistical significance at the 0.05 level. To account for survey design effects, standard errors and coefficients of variation were estimated using the bootstrap technique.[13]

The percentage of 15- to 24-year-olds who had had sexual intercourse at least once was based on "yes/no" responses to the question, "Have you ever had sexual intercourse?"

Estimates of the percentages of 15- to 24-year-olds who became sexually active before age 15 or at ages 15 or 16 were calculated from responses to the question: "How old were you the first time?"

Respondents who reported ever having had sexual intercourse were asked, "In the past 12 months, have you had sexual intercourse?" Those who replied affirmatively were asked, "With how many different partners?"

Condom use was calculated among sexually active 15- to 24-year-olds who had been with multiple partners in the previous 12 months and/or who were not married or in a common-law relationship. The estimates were based on responses to: "Did you use a condom the last time you had intercourse?" Because condom use pertained to the most recent sexual encounter, it may not reflect typical behaviour. However, reports of condom use at the last sexual contact have been shown to approximate usual behaviour.[14]

The data about sexual behaviour in this article are self-reported, and so are subject to social desirability and recall biases. Social desirability is the tendency to modify answers to present a more favourable image. The impact of this phenomenon on estimates of sexual behaviour is difficult to quantify because the perception of what is "desirable" may differ depending on the respondent's age, sex and socio-economic status. Some individuals may give socially acceptable answers (under-report) to questions about sexual behaviour; others may exaggerate their sexual experience. Establishing the veracity of reported sexual activity remains a challenge, as no universally accepted means of validation exists.[15] However, studies that have used test-retest reliability methodology to verify self-reported sexual activity,[16,17] condom use,[18] and age of first sex[17] find that adolescent reports are generally reliable. Moreover, the CCHS questions were developed through expert consultations and tested extensively to help ensure data accuracy and relevance.[19]

Because the CCHS is a household survey, the results can be generalized to the Canadian household population. This is an advantage over school-based surveys, which are often used to collect data about the sexual behaviour of young people, but which exclude youth no longer in school, a population that could be at high risk of contracting sexually transmitted infections and the Human Immunodeficiency Virus (STI/HIV).

Some information that would help to better understand the sexual habits of youth are not available on the CCHS, including relationship status and sexual partner characteristics. As well, the term "sexual intercourse" was not defined in the CCHS, so it is possible that some respondents may have misinterpreted the question.[20]

Table 2
Multiple partners and condom use of sexually active 15- to 24-year olds, by sex, age group and province/territory, Canada, household population, 2003 and 2009/2010

Sex/Age group/ Province/Territory	Multiple partners in past year								Condom used at last sexual intercourse							
	2003				2009/2010				2003				2009/2010			
	Number '000	%	95% confidence interval from	to	Number '000	%	95% confidence interval from	to	Number '000	%	95% confidence interval from	to	Number '000	%	95% confidence interval from	to
Total	**739.6**	**30.9**	**29.5**	**32.4**	**818.4**	**32.5**	**30.8**	**34.1**	**1,268.2**	**62.2**	**60.4**	**63.9**	**1,416.3**	**67.9**‡	**66.2**	**69.6**
Sex																
Males†	436.0	36.7	34.4	38.9	508.6	39.0	36.7	41.3	720.0	67.3	64.8	69.8	817.4	72.5‡	70.2	74.7
Females	303.6	25.3*	23.5	27.0	309.8	25.4*	23.4	27.4	548.2	56.5*	54.1	58.9	598.9	62.5*‡	60.1	65.0
Age group																
15 to 17†	108.0	35.1	31.8	38.3	110.6	34.7	31.2	38.2	239.0	78.5	75.7	81.3	252.6	79.9	76.9	82.9
18 to 19	164.7	34.9	31.9	37.9	194.1	39.4	36.0	42.8	304.3	67.6*	64.7	70.4	349.3	73.7*‡	70.8	76.7
20 to 24	466.9	29.0*	27.1	30.9	513.8	30.0*	28.0	32.1	725.0	56.4*	54.0	58.8	814.3	62.8*‡	60.4	65.3
Province/Territory																
Newfoundland and Labrador	11.7	26.8	19.2	34.4	13.5	31.1	24.9	37.2	27.9	70.4*	63.0	77.8	25.9	70.0	62.4	77.7
Prince Edward Island	3.9	36.6	26.9	46.4	3.3	36.1	24.4	47.8	6.7	72.5	61.8	83.3	5.7	68.3	57.6	78.9
Nova Scotia	22.7	31.3	24.4	38.2	19.8	28.7	21.5	35.9	45.5	71.4	63.8	79.1	37.7	66.8	59.0	74.7
New Brunswick	19.0	31.5	24.8	38.3	17.5	33.2	27.1	39.3	31.6	61.1	53.7	68.6	30.1	73.1‡	66.2	80.0
Quebec	207.4	31.8	28.6	34.9	224.4	34.3	31.1	37.5	304.0	55.7*	51.9	59.6	326.0	59.9*	56.2	63.6
Ontario	273.7	31.0	28.5	33.5	275.3	30.4	27.6	33.2	504.9	65.1*	62.0	68.3	551.2	72.6*‡	70.0	75.2
Manitoba	22.7	27.0	20.3	33.8	24.9	32.6	25.1	40.2	46.3	63.6	55.6	71.5	43.3	64.9*	57.8	72.1
Saskatchewan	20.4	28.7	23.5	33.9	25.7	32.3	26.7	37.9	37.9	66.1	59.3	72.9	42.3	68.9	62.0	75.8
Alberta	63.4	26.9*	23.3	30.5	113.3	34.8‡	29.9	39.6	112.1	59.6*	54.1	65.1	190.2	72.5*‡	68.2	76.7
British Columbia	91.0	34.2	29.5	38.9	96.8	32.6	28.0	37.2	146.5	63.7	59.3	68.1	158.4	65.5	60.2	70.9
Yukon	1.0	39.0	25.4	52.5	1.5	54.0*	42.7	65.2	1.5	73.4	58.4	88.3	1.7	71.2	60.1	82.3
Northwest territories	1.6	38.2	26.6	49.7	1.5	38.6	27.6	49.5	2.1	66.8	53.5	80.2	2.5	78.4*	69.2	87.7
Nunavut (10 largest communities§)	0.9	36.4	26.8	46.0	0.9	36.6	26.5	46.8	1.2	72.7	54.9	90.6	1.4	79.1*	63.2	95.1

† reference category
* significantly different from reference category or from rest of Canada in same year ($p<0.05$)
‡ significantly different from 2003 ($p<0.05$)
§ Iqaluit, Cambridge Bay, Baker Lake, Arviat, Rankin Inlet, Kugluktuk, Pond Inlet, Cape Dorset, Pangnirtung, Igloolik
E use with caution
Sources: 2003 and 2009/2010 Canadian Community Health Survey.

males than females—in 2009/2010, 73% of males, compared with 63% of females, reported using condoms the last time they had intercourse.

As was the case in 2003, the 2009/2010 results indicate that condom use declined with age from 80% among 15- to 17-year-olds to 63% among 20- to 24-year-olds (Table 2). This pattern prevailed among both sexes (data not shown). It may reflect the tendency to use other forms of birth control, such as oral contraceptives, at older ages.[1,2,21] Furthermore, older individuals are more likely to be in longer-term, monogamous relationships in which partners perceive less risk of contracting HIV/STI and the use of condoms to be less important.[22-24]

In 2003, 15- to 24-year-olds with one sexual partner in the past year were less likely than those with more than one partner to report using a condom: 59% versus 68% (Table 3). By 2009/2010, the prevalence of condom use did not differ by the number of sexual partners: 67% (one partner) and 69% (more than one partner) (Table 3).

Regional differences

In 2009/2010, the prevalence of condom use was above the national average in Ontario (73%), Alberta (73%), Northwest Territories (78%) and Nunavut (79%), and below the average in Quebec (60%) and Manitoba (65%) (Table 3). In New Brunswick, Ontario and Alberta, the percentages reporting condom use increased significantly between 2003 and 2009/2010. Condom use did not decline in any province or territory.

Geographic variations in condom use may reflect differences in the effectiveness of campaigns to promote their use[25] and in the accessibility and/or affordability of other contraceptives.[23,25,26] In Quebec, for example, the province's drug insurance plan[27] reimburses the cost of some contraceptives, such as birth control pills.

Conclusion

According to self-reports to the 2009/2010 CCHS, two-thirds of 15- to 24-year-olds had had sexual intercourse at least once; a third of the age group had first done so when they were younger than 17. A

Table 3
Number and percentage of sexually active 15- to 24-year-olds who used condom at last sexual intercourse, by number of sexual partners in past year and age group, household population, Canada, 2003 and 2009/2010

	2003								2009/2010							
	One partner				Multiple partners				One partner				Multiple partners			
	Number '000	%	95% confidence interval from	to	Number '000	%	95% confidence interval from	to	Number '000	%	95% confidence interval from	to	Number '000	%	95% confidence interval from	to
Total	**766.3**	**59.0**	**56.6**	**61.3**	**500.1**	**67.7***	**65.1**	**70.2**	**850.5**	**67.2‡**	**65.1**	**69.3**	**563.7**	**68.9**	**66.3**	**71.4**
Age group																
15 to 17	154.9	78.9	75.2	82.2	84.0	77.8	72.8	82.1	166.7	81.2	77.3	84.6	85.6	77.5	72.2	82.0
18 to19	190.9	66.8†	62.9	70.5	113.4	68.8†	64.2	73.1	202.8	72.7†‡	68.8	76.4	145.8	75.1†‡	70.4	79.3
20 to 24	420.5	51.4†	48.1	54.7	302.7	65.0*†	61.2	68.5	481.0	61.6†‡	58.5	64.6	332.3	64.7†	61.0	68.3

* significantly different from individuals with one partner ($p<0.05$)
† significantly different from 15- to 17-year-olds ($p<0.05$)
‡ significantly different from 2003 ($p<0.05$)
Sources: 2003 and 2009/2010 Canadian Community Health Survey

third of those who were sexually active had had more than one partner in the past year. Condom use increased between 2003 and 2009/2010, particularly among people reporting just one sexual partner. Despite this increase, more than three in ten young adults did not use condoms the last time they had intercourse. Condom use was lower than the national average in Quebec and Manitoba, and higher in Ontario, Alberta, Northwest Territories, and Nunavut. Surveys that collect data about the sexual behaviour and condom use of young adults remain important in informing and supporting health promotion and surveillance programs. ■

References

1. Council of Ministers of Education Canada. *Canadian Youth, Sexual Health and AIDS/HIV Study—Factors Influencing Knowledge, Attitudes and Behaviours*. 2002. Available at: http://www.cmec.ca/Publications/Lists/Publications/Attachments/180/CYSHHAS_2002_EN.pdf.
2. Boyce W, Doherty-Poirier M, MacKinnon D et al. Sexual health of Canadian youth: Findings from the Canadian Youth, Sexual Health and HIV/AIDS Study. *The Canadian Journal of Human Sexuality* 2006; 15(2): 59-68.
3. Rotermann M. Sex, condoms and STDs among young people. *Health Reports* 2005; 16(3): 39-45.
4. Sellors JW, Mahony JB, Kaczorowski J, et al. Prevalence and predictors of human papillomavirus infection in women in Ontario, Canada. *Canadian Medical Association Journal* 2000; 163(5): 503-8.
5. Public Health Agency of Canada. *Canadian Guidelines on Sexually Transmitted Infections* (with updates and errata)-Complete PDF. Available at: http://www.phac-aspc.gc.ca/std-mts/sti-its/pdf/sti-its-eng.pdf.
6. Heck JE, Berthiller J, Vaccarella S, et al. Sexual behaviours and the risk of head and neck cancers: a pooled analysis in the International Head and Neck Cancer Epidemiology (INHANCE) consortium. *International Journal of Epidemiology* 2010; 39: 166-81.
7. Wellings K, Nanchanhal K, Macdowall W, et al. Sexual behaviour in Britain: early heterosexual experience. *The Lancet* 2001; 358: 1843-50.
8. Abma JC, Martinez GM, Copen CE, et al. Teenagers in the United States: Sexual activity, contraceptive use, and childbearing, National Survey of Family Growth 2006-2008. *Vital and Health Statistics* 2010; 23(30): 1-57.
9. Gilbert M, Li X, Petric M, et al. Using centralized laboratory data to monitor trends in Herpes Simplex Virus type 1 and 2 infection in British Columbia and the changing etiology of genital herpes. *Canadian Journal of Public Health* 2011; 102(3): 225-9.
10. Public Health Agency of Canada. *STI Statistics*. Available at: http://www.phac-aspc.gc.ca/sti-its-surv-epi/surveillance-eng.php.
11. Sellors JW, Mahony JB, Kaczorowski J, et al. Prevalence and predictors of human papillomavirus infection in women in Ontario, Canada. *Canadian Medical Association Journal* 2000; 163(5): 503-8.
12. Statistics Canada. *Canadian Community Health Survey (CCHS) – Annual Component*. Available at: http://www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getInstanceList&SurvId=3226&SurvVer=1&InstaId=15282&SDDS=3226&lang=en&db=imdb&adm=8&dis=2.
13. Rust K, Rao JNK. Variance estimation for complex surveys using replication techniques. *Statistical Methods in Medical Research* 1996; 5: 281-310.
14. Younge S, Salazar LF, Crosby RF, et al. Condom use at last sex as a proxy for other measures of condom use: Is it good enough? *Adolescence* 2008; 43(172): 927-31.
15. Brener ND, Kann L, Kinchen SA. Methodology of the Youth Risk Behavior Surveillance System. *Morbidity and Mortality Weekly* 2004; 53(RR-12): 1-13. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5312a1.htm.
16. Brener ND, Kann L, McManus T et al. Reliability of the 1999 Youth Risk Behavior Survey Questionnaire. *Journal of Adolescent Health* 2002; 31: 336–42.
17. Brener ND, Collins JL, Kann L, et al. Reliability of Youth Risk Behavior Survey Questionnaire. *American Journal of Epidemiology* 1995; 141: 575-80.
18. Jeannin A, Konings E, Dubois-Arber F, et al. Validity and reliability in reporting sexual partners and condom use in a Swiss population survey. *European Journal of Epidemiology* 1998; 14(2): 139-46.
19. Béland Y. Canadian Community Health Survey –Methodological overview. *Health Reports* 2002; 13(3): 9-14.
20. Sanders SA, Machover Reinisch J. Would you say you "had sex" if …? *Journal of the American Medical Association* 1999; 281(3): 275-7.
21. Rodriques I, Deboddeleer N, Turcot N, L'usage du condom chez les adolescentes consultant pour une contraception orale dans la région de Montréal. *Canadian Journal of Public Health* 2005; 96(6): 438-42.
22. Rotermann M, McKay A. Condom use at last sexual intercourse among unmarried, not living common-law 20- to 34-year-old Canadian young adults. *The Canadian Journal of Human Sexuality* 2009; 18(3): 75-88.
23. Black A, Yang Q, Wu Wen S, et al. Contraceptive use among Canadian women of reproductive age: Results of a national survey. *Journal of Obstetrics and Gynecology Canada* 2009; July: 627-40.
24. Bolton M, McKay A, Schneider M. Relational influences on condom use discontinuation: A qualitative study of young adult women in dating relationships. *The Canadian Journal of Human Sexuality* 2010; 19(3): 91-104.
25. Bensyl DM, Iuliano AD, Carter M, et al. Contraceptive use—United States and Territories, Behavioral Risk Factor Surveillance System, 2002. *Morbidity and Mortality Weekly Report Surveillance Summary* 2005; 54(6): 1-72.
26. Godeau E, Gabhainn SN, Vignes C, et al. Contraceptive use by 15-year-old students at their last sexual intercourse. *Archives of Pediatrics and Adolescent Medicine* 2008; 162(1): 66-73.
27. Régie de l'assurance maladie Québec. Liste des médicaments. Available at: http://www.ramq.qc.ca/en/regie/lois/list_med.shtml.